

Remarks

Applicants respectfully request reconsideration of the application.

Claims 1 and 17 are provisionally rejected on the ground of non-statutory obviousness type double patenting over claim 1 of co-pending application 10/836,094 in view of US Patent Publication 2004-0075869 by Hilton et al. ("Hilton").

Claims 1-4, 6-10 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication 2002-0054692 by Suzuki et al. ("Suzuki") in view of Hilton.

Claims 5 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Hilton and US Patent Publication 2001-0030759 by Hayashi et al. ("Hayashi").

Applicant respectfully traverse the rejections.

Claim 1

A. Suzuki and Hilton are not prior art to claim 1.

Claim 1 has priority to at least January 20, 1999, based on the claim of priority to 09/234,780 (the '780 application). The '780 application describes embodiments that correspond to the elements of claim 1 as follows:

A method for analyzing an image of a printed object to determine whether the printed image is a copy or an original (see, e.g., page 2, line 24 to page 3, line 16 of the '780 application), the method comprising:

determining whether a machine readable auxiliary signal is embedded in the image (in the '780 application, the two watermarks are a form of machine readable auxiliary signal embedded in the image), wherein the auxiliary signal is embedded at embedding locations using a set of two or more print structures that change in response to a copy operation (see, e.g., embodiments at page 6, line 9 to page 13, line 13; specifically, fine and coarse grain embodiment at page 7, lines 10-23, pixel assignment embodiment at page 8, line 17 to page 9, line 14, and an embodiment where the two watermarks have different color transformations at page 10, line 1 to page 13, line 13), the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable (see, e.g., page 2, line 24 to page 3, line 16 of the '780 application); and

based on evaluating the machine readable auxiliary signal, determining whether the printed object is a copy or an original (see, e.g., page 3, lines 1-3, page 4, lines 9-22, and page 6, lines 1-7 of the ‘780 application)

Therefore the cited references are not prior art to claim 1.

B. The Combined Teachings of Suzuki and Hilton do not render claim 1 obvious.

The combined teachings of Suzuki and Hilton fail to teach or suggest “based on evaluating the machine readable auxiliary signal, determining whether the printed object is a copy or an original” in combination with the other elements of claim 1. Suzuki deals with identifying copy protected images, not determining whether a printed object is a copy or an original. Likewise, Hilton does not teach determining whether a printed object is a copy or an original as claimed. The cited passages in Hilton refer to ways in which certain types of pixel arrangements, colors or shades can be used to carry a binary 1 or 0. Hilton teaches that error correction can be used to overcome errors caused by distortion of the pixels due to scanning, etc. The accuracy of the data is important because it is used to authenticate other information on the document as described in paragraph 0141. The data read from the pixels is not used to distinguish a copy from an original, but instead to confirm that the data is consistent with other information on the document (e.g., a check). This document may be scanned and printed to create a copy, yet the data will remain the same in the copy as in the original. Thus, the combined teachings do not teach or suggest the elements of claim 1.

Claim 2

As noted above, the ‘780 teaches an embodiment in which two watermarks with colors that change differently in response to a copy operation are used to distinguish an original from a copy. Therefore, the ‘780 application supports claim 2, and Hilton and Suzuki are not prior art.

Claims 3-4

Claims 3-4 are patentable over Suzuki and Hilton for at least reason B provided for claim 1. Based on the Office’s interpretation of these claims, they also likely have support in the ‘780 application.

Claims 6-10 and 14

Claims 6-10 and 14 are patentable over Suzuki and Hilton for at least reason B provided for claim 1. These claims also include additional elements that further distinguish them over the cited art. For example, Hilton shows binary data carried in vertical and horizontal lines, respectively, but is silent with respect to line continuity as recited in claim 8.

Claim 15

Claim 15 is supported by the '780 specification. Therefore, Suzuki and Hilton are not prior art.

Moreover, the combined teachings of Suzuki and Hilton fail to teach or suggest: "creating a metric to detect the convergence or divergence from an image scanned of a suspect printed object to determine whether the suspect printed object is a copy or an original" in combination with the other elements of claim 15. Suzuki deals with identifying a copy protected image, not detecting convergence or divergence as claimed. Hilton does not teach creating a metric to detect the convergence or divergence, but instead uses error correction so that data can be read from pixels despite distortion of them.

Claim 16 is likewise patentable over the cited references.

Claims 17 and 19

Claim 17, though different than claim 1, is patentable over the cited references for similar reasons as provided for claim 1.

Claim 18

Claim 18 is patentable for at least similar reasons as reason B provided for claim 1, and the reason provided for claim 8.

Claims 20 and 21, though different than claim 15, are patentable over Suzuki and Hilton for similar reasons as provided for claim 15.

Regarding claims 5 and 11-13, Hayashi fails to teach the elements of the corresponding independent claims that are shown to be missing from Hilton and Suzuki. Therefore, the cited combination does not teach all of the elements of these claims.

In view of the above, all of the claims are patentable over the cited art.

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